East Slopes North - Canadian Border to Lake Chelan

Issued: 6:02 PM PST Monday, December 26, 2016

by Kenny Kramer

NWAC avalanche forecasts apply to backcountry avalanche terrain in the Olympics, Washington Cascades and Mt Hood area. These forecasts do not apply to developed ski areas, avalanche terrain affecting highways and higher terrain on the volcanic peaks above the Cascade crest level.

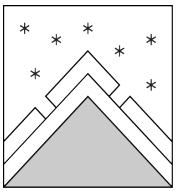
The Bottom Line: Very dangerous avalanche conditions are expected in much of the terrain Tuesday. Storm or persistent slabs will be sensitive Tuesday. The safest plan is to avoid avalanche terrain of consequence until storm, wind slab or persistent slabs stabilize.

Elevation	Tuesday		Outlook for Wednesday
Above Treeline	High	Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.	High
Near Treeline	High	Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.	High
Below Treeline	Considerable	Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.	Considerable

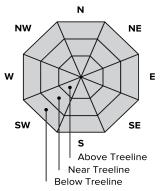
Avalanche Problems for Tuesday

Storm Slabs

Storm slabs usually stabilize within a few days, and release at or below the trigger point. They exist throughout the terrain, and can be avoided by waiting for the storm snow to stabilize.

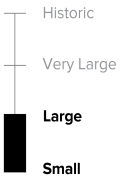


Avalanche Problem



Aspect/Elevation

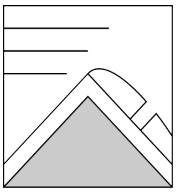
Likelihood



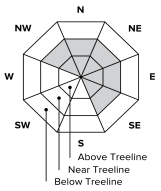
Size

Wind Slab

Wind slabs can take up to a week to stabilize. They are confined to lee and cross-loaded terrain features and can be avoided by sticking to sheltered or wind scoured areas.

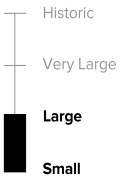


Avalanche Problem



Aspect/Elevation

Likelihood



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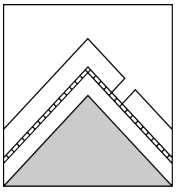
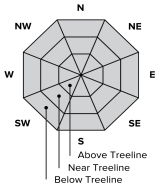
Persistent Slab

Persistent slabs can be triggered by light loads and weeks after the last storm. You can trigger them remotely and they often propagate across and beyond terrain features that would otherwise confine wind and storm slabs. Give yourself a wide safety buffer to handle the uncertainty.

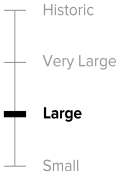


Avalanche Problem



Aspect/Elevation

Likelihood



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Snowpack Analysis

Weather and Snowpack

Strong storms a week ago Sunday and Monday deposited generally half to 1 inch of water equivalent along the east slopes through early Tuesday morning. Storm totals generally ranged from 6 - 12 inches along the east slopes during this cycle. Westerly winds were especially strong with the 2nd system late Monday night and into Tuesday with gusty winds mixing down into usually more wind sheltered terrain.

A front Thursday and upper trough on Friday deposited about 1-5 inches of snow along the east slopes.

Scattered snow showers, sunbreaks and generally light winds summed up the weather on Saturday with fair and cold weather seen on Christmas Day and early Monday, before a strong front arrived late Monday.

Recent Observations

NWAC pro-observer Jeff Ward was in the Icicle Creek area up to about 6300 feet on Wednesday and saw evidence of a widespread natural wind slab avalanche cycle during the last storm, with one very large crown seen on a north aspect. The December 17th persistent weak layer (PWL) was found at 15-30 cm below the surface on W to N to E slopes. The layer was unreactive both in large column snowpack tests, ski tests and cornice drops.

The NCMG on Friday and Saturday at Washington Pass had some planar hand shears in wind affected snow, but the only instability directly noted was small loose dry avalanches in steep rocky terrain. The 12/17 interface was found to be unreactive in several snowpack tests.

NWAC observer Tom Curtis was on DirtyFace Peak near Lake Wenatchee Saturday and found the 12/17 PWL 15-25 cm down, but not propagating in snowpack tests on N-E-SE aspects between 4000-5500 feet. Tom also found shallow and stubborn wind slab in the near treeline band.

A different story continues to evolve in the Mission Ridge area. On Wednesday avalanche mitigation produced 1.5 -3 ft hard slab avalanches in 3 separate paths! These avalanches were releasing on basal facets about 15 cm from the ground. On Thursday, snowpits on W-N-E slopes at 6500 feet continued to show hard slab layers giving hard compression test results with moderate quality shears on facets about 15 cm from the ground with about 120 cm (4 ft) of total snow. On Saturday, a backcountry ski tourer in the Lake Clara area near Mission Ridge reported a huge whumpfing noise, likely indicating a collapse of the basal facets. While no avalanche occurred, the terrain where the collapse occurred connected to a large avalanche path that was NE facing near treeline. While deep, persistent slabs in this area are unlikely to trigger, the appropriate travel response in consequential avalanche terrain is avoidance!.

Detailed Avalanche Forecast for Tuesday

Stormy conditions Monday night into Tuesday will cause an increasing avalanche danger through Tuesday.

Storm slabs will continue to build over a variety of weak surface snow conditions, becoming more sensitive to trigger with increased load. Natural or triggered storm slabs may break down to deeper persistent layers where present, making larger and more dangerous avalanches possible Tuesday.

Fresh wind slabs should continue to build Monday night and Tuesday near and above treeline. Wind slabs will likely be the most sensitive in areas where it poorly bonds to an underlying crust.

The persistent slab problem still warrants attention throughout the Cascade range, especially in the Mission Ridge area where recent full depth avalanches have occurred. Significant loading by Tuesday will make this layer more sensitive to trigger where present. Remember that persistent weak layers are generally involved in larger avalanches and cautious route-finding and conservative decision making will be essential for safe travel Tuesday. Err on the side of caution Tuesday by avoiding avalanche terrain of consequence, especially if you experience direct observations of this layer, such as whumpfing or shooting cracks.

Mountain Weather Synopsis for Tuesday & Wednesday

A strong front moved across the Olympic range overnight and the Cascades early Tuesday morning. Moist post frontal flow is being carried into the Pacific Northwest by a very strong westerly jet stream directed precisely at us! The jet is in excess of 150 kts and will provide the punch to maintain moderate to at times heavy orographic precipitation along the west slopes and over the volcanoes through the day and overnight. A short wave disturbance rapidly approaching the coast should enhance precipitation near midday through the afternoon. Showers slowly taper Tuesday night into early Wednesday as brief high pressure rebuilds over the region midday Wednesday. This should cause showers to diminish or end by late morning, Wednesday with a brief break Wednesday night. Not much change in freezing levels is expected with snow levels generally between 1-2000 feet most areas into Wednesday. The next frontal system to affect the region should arrive late night Wednesday and early Thursday to renew the precipitation once again.

24 Hour Quantitative Precipitation ending at 4 am

Location	Wed	Thu
Hurricane Ridge	.25 - .50	.25 - .50
Mt Baker Ski Area	1.00	.25 - .50
Washington Pass	.25 - .50	.25 - .50
Stevens Pass	1.00	.25 - .50
Snoqualmie Pass	1.00	.25 - .50
Mission Ridge	lt .25	lt .10
Crystal Mt	.50	lt .25
Paradise	1.00 - 1.50	.25
White Pass	.75 - 1.00	lt .25
Mt Hood Meadows	1.50	lt .25
Timberline	1.50 - 2.00	lt .25

LT = less than; WE or Water equivalent is the liquid water equivalent of melted snow in hundredths of inches. As a rough approximation 1 inch of snow = about .10 inches WE, or 10 inches of snow = about 1 inch WE.

Snow Level/Freezing Level in feet

Day	Olympics	Northwest Cascades	Northeast Cascades	Central Cascades	South Cascades	Easterly Flow in Passes
Tuesday	2000'	2000'	1000'	2000'	2000'	
Tuesday Night	1500'	1500'	500'	1500'	2000'	
Wednesday	2000'	2000'	1000'	2000'	2000'	
Wednesday Night	2500'	2000'	1500'	2000'	2500'	*

Cascade Snow / Freezing Levels noted above refer to the north (approximately Mt Baker and Washington Pass), central (approximately Stevens to White Pass) and south (near Mt Hood). Freezing Level is when no precipitation is forecast.

* Note that surface snow levels are common near the passes during easterly pass flow and may result in multiple snow / freezing levels.